PAN AMERICAN fisherman

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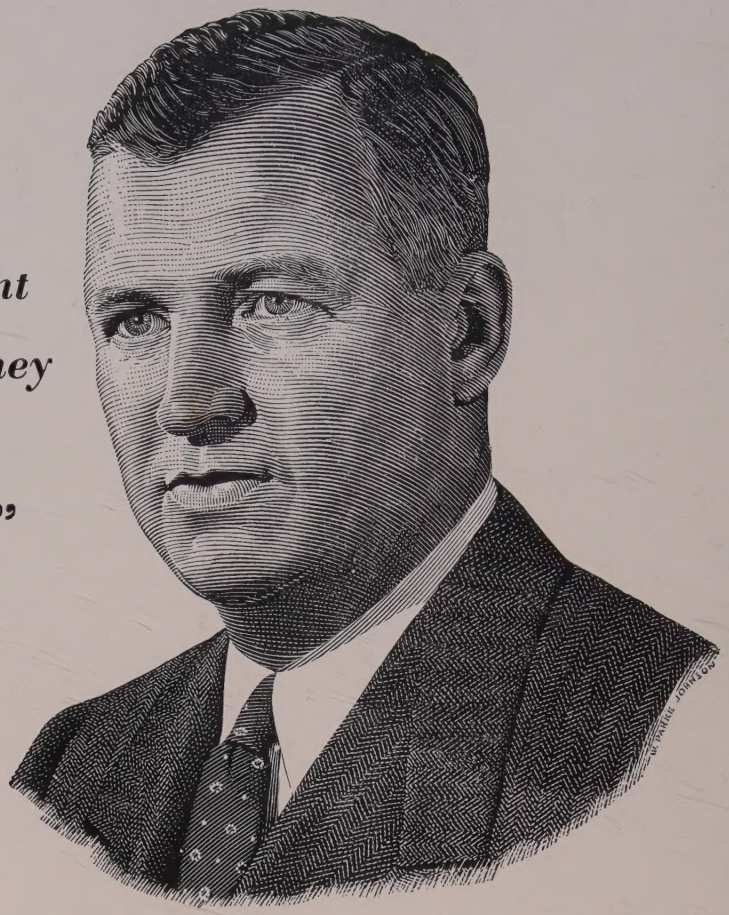
IN THIS ISSUE . . .

LIFE OF A TUNA FISHERMAN ★ FWS RESEARCH PROGRAMS

ALONG THE SAN DIEGO WATERFRONT

"Wise public debt management with its goal of sound money is of prime concern to every American."



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PAN AMERICAN FISHERMAN

More About Fish Sticks

AT the NFI convention last month "Fish Sticks . . . A Revolution in the Fish Business" was the theme of a dramatic merchandising presentation. Herb Stevens, of General Foods Corp., Birds Eye Division, Boston, served as commentator on the panel which stimulated a television program.

He described briefly the revolution which has taken place in the fishing industry during the past year and stated that two factors appear to be evident about this new product: first, it is creating an entirely new market for the fishery products, and second, it is encouraging more frequent use of fish in the home. Then, very much in the manner of a news commentator, he called upon industry leaders throughout the country for their views on various phases of the growth of the fish stick business.

Larry Hopkinson, of Atlantic Coast Fisheries, Boston, reviewed the history of the research which resulted in the first fish blocks and led to the frozen consumer packages of fillets.

Ed Piszek, of Mrs. Paul's Kitchen, Philadelphia, emphasized the requirements of uniform quality and better packaging. He particularly pointed out that it would be a grave mistake for the fish stick industry to get into any kind of price war during the early stages of the business.

Gene Rutherford, of San Juan Fishing & Packing Co., Seattle, pointed out that the West Coast processors were inclined to the frozen breaded sticks—uncooked. He said, however, that this was not a closed subject. He further pointed out that West Coast firms felt that fish sticks offered an unusual appeal for marketing salmon and halibut.

Jack Fulham, Fulham Bros., Boston, discussed the marketing techniques used in introducing fish sticks and the fact that improvements must be made in merchandising this completely new product.

William Frasure, of Wrigley's Stores, Detroit, emphatically stated that fish sticks were a most successful product but that there was a distinct need for identification of the varieties of fish used in making the sticks. He further added that he felt the industry should be proud of the particular species that were used, clearly indicating the species in each package so that the consumer would be assisted in her purchases and the retailer would be aided in keeping track of inventories.

Mrs. Alexander Burns, a Cleveland housewife, discussed the consumer's attitude toward fish sticks, listing convenience and time-saving in preparation; economy and flavor. She told of how fish sticks appealed to her children and urged the industry to give more attention to youth as a market for the product. She called upon the industry to insist on high quality of product, saying the housewife is willing to try the product but will not buy again if she is disappointed in quality. She also emphasized the need for identification of the varieties of fish used in the sticks.

There was general agreement among the experts that fish sticks are here to stay and that instead of detracting from the sale of other frozen fish products, they would create an increased total market and usage of all fishery products. ★

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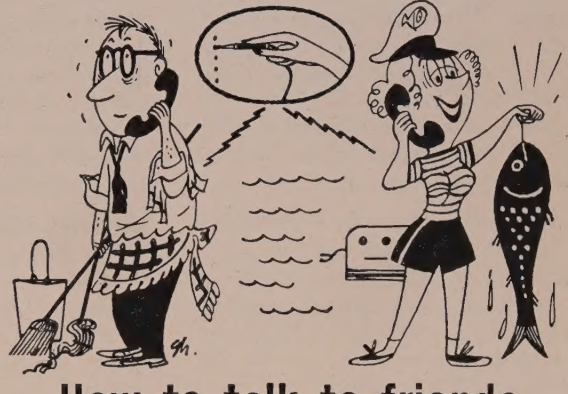

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FWS Research Programs

A MEETING was held in Seattle with interested fishery industry representatives from the Pacific Coast and Hawaii to discuss the progress of research at the FWS four Technological Laboratories and to encourage comments on the present and possible future research program.

The Seattle laboratory's progress on the projects assigned for 1954 was discussed by M. E. Stansby; that for the Kechikan laboratory by J. A. Dassow; and that of the Boston and College Park laboratories by C. Butler. A brief resume of the discussions on the projects now underway follows.

Discoloration in Canned Tuna

William S. Hamm, of Westgate California Tuna Co., stated that his company would like the research broadened on this project to include the degree of scorch as well as the discoloration from sulphides.

George Courtney, from Van Camp Seafoods Co., inquired whether the study was for discoloration of tuna or can, and if iron had been introduced to test its effect on the discoloration. Mr. Stansby pointed out the discoloration was on the tuna and that at present organic compounds, such as the fatty acids in the added oils, were being investigated for their effect on the degree of discoloration.

R. K. Pedersen, of Star Kist Foods, Inc., pointed out that tuna is quite variable as to degree of discoloration, with skipjack an outstanding example of this variability. He stated his company was in favor of the continuance of such studies.

Freezing Fish at Sea

Considerable interest was manifest in this project. Among the questions asked were:

Does the use of calcium chloride in the immersion brine result in a bitterness in fish frozen therein? *Answer*: Apparently not from taste panel results.

How well does the fish frozen at sea compare with the iced fish in the opinion of companies processing both? *Answer*: They averaged higher in quality than the fillets from iced fish.

What about the comparative yield of fillets from round frozen fish and iced-gutted fish? *Answer*: Yield was slightly higher from the former on a comparable basis.

Does any of the yield increase arise from water picked up during thawing of the round-frozen fish? *Answer*: No. There is a greater actual fillet, weight recovery, fish are firmer, easier to scale and to fillet. The viscera and frame are also available in good condition for other processes.

Are these fish thoroughly thawed? *Answer*: Only enough to permit safe, efficient filleting.

What degree of confidence do you place in the cost data developed for the freezing of fish at sea? *Answer*: At this time a parallel economic comparison cannot be made. Several factors, e.g. (1) higher overall quality; (2) more nearly full capacity use of shore-processing facilities during the production year; (3) lessened need for hazard to vessel and fishermen because of sea operations in periods of bad winter weather; and (4) better average earnings for the balance of the year possible with the freezing-fish-at-sea technique are difficult to place a dollar value on, but are believed to offer very real advantages. Only an actual commercial scale test would give the full cost comparison.

Suggested Research for 1955

Mr. Pedersen asked that researchers keep in mind that tuna freezing operations are not as satisfactory as West Coast processors would like. Some of the Delaware data and observations may very well be applicable to tuna fleet practices.

Mr. Hamm agreed and said it would be a powerful influence for improvement in vessel practices if, through better fish handling procedures, more money could be paid for fish so preserved.

Mr. Pedersen pointed out that now brine concentrations, freezing temperatures, and handling practices in general are quite variable. The resultant heavy salt penetration, abnormal rejects, torn and split fish are a problem. With the tuna standards studies underway, improvement in the overall quality of the tuna is becoming more important. ★

Transmitters Operating on 2738 kc

Numerous inquiries have been received at the Federal Communications Commission relative to acceptable methods of measurement of harmonic radiation of ship transmitters operating on 2738 kc. as required by Section 8.351(d) of the Commission's Rules.

Accordingly the Commission offers these suggestions as means for complying with the requirements:

(1) Use of a transmitter which is certified by the manufacturer to comply with the requirements of the rule. This certification can be done by the manufacturer to the Commission through the licensee of the station.

(2) Use of a filter or trap which is factory adjusted and is certified by the manufacturer to have the required harmonic suppression, and is certified as being installed in accordance with the manufacturer's directions.

(3) A combination of (1) and (2) where such combination provides the required harmonic suppression.

(4) Field strength measurements at the fundamental carrier frequency of 2738 kc. and at the second harmonic frequency of 5476 kc., using a calibrated commercial field strength meter of a responsible manufacturer of such instruments and with the measurements being taken in accordance with standard procedures for such measurements.

(5) Field strength measurements at the fundamental carrier frequency of 2738 kc. and at the second harmonic frequency of 5476 kc. using a receiver with an appropriate output meter or other indicating device and a field strength calibrating source such as a laboratory type of calibrated signal generator. The receiver antenna should be short compared to a wavelength at the harmonic frequency, i.e. it should not exceed 20 feet in length and the same receiving antenna should be used for the fundamental and harmonic frequencies.

In making measurements, reference should be made to the I.R.E. Standards on Radio Wave Propagation, measuring methods, or to standard engineering texts containing material on this subject so as to assure that proper procedures are used.

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About This Issue . . .

What do you do when you want to fish for tuna where live bait is a problem? Turn to gill nets? Or to purse seine fishing? These are problems analyzed in the article, "Experimental Tuna Purse Seining in the Central Pacific," on page 12.

*

"Oh, for the life of a fisherman!" sighs many a boy. But after he grows up and tries it for a while it is plain that all is not beer and skittles . . . and still it has its good points. See "Life of a Tuna Fisherman" on page 10.

Some time maybe we'll do "The Life of a Publisher." But who cares? Nobody much . . . only this time you'll find some sound and sensible talk about present and future conditions on "The Publisher's Page"—page 9.

*

Other timely topics covered in this issue include "Fish Sticks" on page 3, "FWS Research Programs" on page 4, "Season's First Albacore" on page 25, and "San Diego Waterfront" on page 14 . . . in addition to the regular departments scattered through the book.

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Imports and Exports, January-April, 1954

Imports of tuna and tunalike fish during January-April 1954 show considerable gains over the same period of a year ago, according to preliminary information compiled by the Fish and Wildlife Service from data collected by the Bureau of Census.

Fresh and frozen tuna imports increased 31%; tuna canned in brine, 55%; and bonito canned in oil, 41%. Tuna canned in oil, however, showed a decline of 73% but the quantity was relatively small as compared with the items showing increases.

Imports of groundfish and ocean perch (rosefish) fillets were 33% greater than those of the January-April period of 1953. Other fillets showed a decline of 7%.

Shrimp imports showed an increase of 17% in the four-month period of 1954 over that of a year ago. Fresh and frozen lobster imports were down 16%.

Canned sardines, not in oil, imported during January-April 1954 were about five times the quantity imported in that period of 1953.

Imports of fish meal were 20% greater than during the four-month period of a year ago.

Exports of fish oils during January-April 1954 increased 83% above those of the comparable period of 1953. Canned sardines and mackerel show considerable declines.

Shrimp Imports

Although Mexico continues to be the largest exporter of all shrimp to the United States, imports in 1953 from other countries increased significantly over previous years. The increase from other countries from 1952 to 1953, for example, totaled 1,718,930 pounds. Although the complete 12-month breakdown by country is not yet available, the breakdown of shrimp imports during the month of December is interesting and is as follows:

Country	Pounds
Panama	262,580 A
Peru	55,501 B
Cuba	32,800 B
Argentina	22,940 B
Norway	33,749 C
Iceland	30,750 C
Japan	25,558 C

Form of Processing

A. Fresh and frozen
B. Frozen
C. Mostly frozen but some canned

California Tuna Landings

Tuna landings during April were up 30% over March and slipped 7% from last year's figure, according to California fish canners' reports tabulated by the Department of Fish and Game.

Fishermen and importers delivered just under 15,000 tons of the State's top marine cash crop to processors during the month. Included were 1,420 tons of albacore, 6,330 tons of skipjack, 7,100 tons of yellowfin, and 99 tons of bluefin tuna, with each species showing a gain over the March totals.

Mackerel fishermen delivered 260 tons of Pacific mackerel and 375 tons of jack mackerel. Anchovy landings were back to 1,940 tons, after dropping to under 800 tons in March.

New Shrimp Product

The SeaPak Corporation of St. Simons Island, Georgia, has packaged a brand new product—a quick-cooking shrimp—for distribution in the consumer market. Because the product is new, the package is specifically designed to provide maximum effectiveness for two basic selling features: The Qwik-Cook shrimp (already peeled and deveined) cook in 3 minutes—no thawing necessary.

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Report from Washington

Gleaned from the Nation's Capital by John Harms

CONGRESS OK'S FISH BILL.--President Eisenhower was expected to sign the Saltonstall-Kennedy fish research and education bill as we went to press. The House of Representatives quickly followed Senate action in approving the bill which provides $3 million each year for three years for the Fish & Wildlife Service out of import duties.

The money, which will permit expansion of the Bureau of Commercial Fisheries, will be used to encourage the distribution of fishery products and boost biological and technological research.

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HIGH SEAS PROTECTION.--Fish interests in Washington were hopeful that this session of Congress would adopt the "Fisherman's Protective Act of 1954," as recommended by the National Fisheries Institute. Behind these hopes, however, there is a lot of doubt since in the last days of any Congress the best of intentions can get off the track.

Aim of identical bills introduced in the Senate and House is to put into law a statement of where fishermen may legally operate on the high seas with U. S. protection against interference by other nations. It also provides for indemnities for fishermen for any losses suffered by seizure by a foreign nation while operating in what the U. S. considers to be the high seas.

The bill defines the high seas as the area of ocean outside a three-mile territorial waters belt measured from low water mark. But under the bill, exceptions are noted . . . as for instance, in the case of treaties, U. S. laws and where a nation takes advantage of the so-called "abstention principle" for protection of fisheries which might lie in the high seas.

Under the "abstention principle," a U. S. fishing vessel would not be protected by this proposed law if it operated on a stock of fish which had been developed, investigated and conserved by a nation claiming the "principle." The legislation, therefore, does recognize the right of a foreign nation, or of the U. S. itself, to keep other fishermen off such fishing grounds--provided a nation has developed, investigated and conserved a particular fishing ground.

Indemnities are called for under the bill with the idea that it is to the interest of the U. S. to preserve the freedom of the seas. It is believed that this country therefore has an obligation to take every opportunity to make known internationally its intentions to maintain such freedom. This is deemed particularly necessary now when coastal nations throughout the world are claiming they have exclusive rights up to a distance of 200 miles from their shores.

In the Senate, the bill is S. 3594 sponsored by Massachusetts

Sen. Saltonstall, California Sen. Kuchel and 10 other Senators. In the House, 34 separate identical bills were introduced at one time. Sponsors of "protective" bills included California Congressmen Allen, Doyle, Holt, Hosmer, King, Lipscomb, Maillard, McDonough, Miller, Phillips, Scudder, Utt and Wilson.

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OLD AGE PENSIONS.--Odds favored inclusion of roughly 30,000 fishermen under the expanded Social Security program which was expected to clear Congress by the time you read this. The House already has approved the Administration's request for broader old age pension coverage under Social Security and there was little doubt in Washington that the Senate would concur.

The National Fisheries Institute explains the proposed coverage of fishermen like this: Fishermen would be included for old age and survivors insurance if they are employed on boats of less than 10 net tons other than salmon and halibut boats in this class--which already are covered. If enacted, the proposal would include all persons--except certain minors--engaged in the fishing industry under Social Security. This applies to self-employed persons as well as employed.

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TAX AND BENEFITS.--Fishermen who are not under Social Security can plan on both taxes and benefits for themselves and family as follows if the new law is passed:

Tax. If you are an employed fisherman, your employer will deduct 2 per cent of your annual earnings from your pay, and will add 2 per cent of his own to your Social Security account. If you are self-employed, you will be required to deduct 3 per cent of your annual income for this purpose. But these deductions will be made only up to the first $4,200 of income in any one year. At present the ceiling is $3,600, but Congress is expected to increase it to $4,200 or thereabouts.

Benefits. Upon retiring at the age of 65, a fisherman would receive a monthly income ranging from $30 to $108, depending upon his average monthly earnings before retirement. Under the present proposal, if you made an average of $100 a month before retirement, you would get about $60 per month pension for yourself. If your average monthly income was $160, you would get a $70 pension. If you earned $200 per month, the pension would be $78. Top pension would be $108 a month if your income was $350 a month or more.

A fisherman's wife would get about half as much as her husband . . . children up to 18 also would get half. Widows would receive three-fourths of what their husbands would get. Maximum amount per family, however, would be $200 per month.

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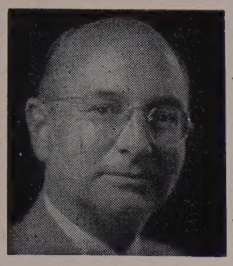
CHEMICAL ADDITIVES.--Don't look for a new law this year on the amount and types of chemicals which can legally be added to fish products. But it is something to keep an eye on. Legislators who say there should be some well-defined restrictions of chemical additives plan to push for adoption of such a law during the next session of Congress.

One such bill has recently been sponsored in the House by Congress-

(Continued on page 21)



The Publisher's Page

Summer Slump, Bah!—Like the big bad wolf that wasn't there, the spring business slump wasn't there. And now it seems that the summer slump won't show up, either.

People who were shaking in their boots a few short months ago now are shaking their fists at Old Man Depression and hollering "Who's afraid? Nobody!"

Once in a while we meet a fellow who talks good times with one cheek sticking out as if from a healthy helping of Mail Pouch. However, it's plain he is just talking with his tongue in his cheek. He hopes times are going to continue good but he's still skeptical. He shakes his head and asks, "How long can this good thing last, anyhow?"

Well, we don't know. Neither do the economists and crystal gazers. But all signs point to a good long time still ahead. Certainly there is nothing like 1929-33 staring us in the face.

We may get whacked down again sometime, but it's not just around the corner. Seldom have all the smart boys been in such complete agreement . . . that this country is going to continue on the up and up through 1955 and 1956.

After that? Well, there's plenty of time to consider that period later on. Now the sun is shining and let's make hay.

More About Imports.—Citing the current coffee situation as a warning of what can happen when a nation depends on foreign countries for raw materials and processed foods, The Tuna Research Foundation dispatched an appeal on relief for its situation to Congress following a recent executive meeting at Long Beach, California.

The statement outlining the predicament of the tuna industry revealed that "excessive imports of tuna under existing inadequate tariffs or quota restrictions threaten to wreck the American tuna industry. If that happens uncontrolled prices, similar to those in the present coffee market could result."

Figures substantiating the industry's claims disclosed that Japanese imports of canned tuna averaged 337,314 cases per year in the five years prior to World War II. Following the war, the imports jumped to an average of 1,044,809 cases per year. In the first 11 months of 1953, case numbers increased to 1,571,599, the statement revealed.

Mr. Morris pointed out that the Foundation's statement to Congress emphasized that the industry does not wish to exclude the Japanese from participation in the American market, but that it feels "it should be on an orderly basis that would permit the exporting countries to have their customary share of the market. If that point is arrived at actual imports of Japanese tuna will continue to grow as the market expands," he concluded.

Merchandising Fish.—Many successful producers and distributors of fishery products are doing more than just selling fish these days. They are "merchandising" their wares in a manner intended to impress shoppers in self-service stores.

An example of successful merchandising of canned fish was found recently in a Wisconsin supermarket, a 14-foot boat, complete with fish nets, was loaded with more than 125 cases of sardines, salmon, tuna, and shrimp. Ceiling streamers throughout the store advertised the news that the store's fish boat was in. All of the boat's load was said to have been sold in the week-end promotion.

An established New England fillet producer for several months has been using a coupon deal to introduce his new ready-fried frozen fish. A coupon band, redeemable by the company for 25 cents, is placed around each package in the new pre-cooked line. Reports indicate the company is pleased with the results of its efforts.

Pads of fish recipes from which shoppers can tear off their choice are now found above the fish displays in many frozen food cases. This type of point-of-sale material, used successfully for many years by other food industries, is inexpensive enough to be used by nearly any fish distributor.

Effective packaging is as much a part of successful merchandising in self-service stores as advertising. Accordingly the lobster industry is trying out a recently developed cellophane package. Reports indicate that lobsters can be kept alive four days in these new packages.

The tuna industry in a merchandising campaign complete with premiums, point-of-sale material, and national media advertising, has for some time been building acceptance of tuna on a nation-wide, year-around basis. Canners say the results have been quite satisfactory. Incidental to their primary purpose, they have also made consumers more generally "fish conscious"—all of which is most helpful.

The Kremlin's Utopia.—Of all the wonderful places in the world, Russia is IT according to the Kremlin press agents. And one of the main reasons for this is a kind and considerate government, anxious for the people's welfare . . . not at all like the greedy, grasping, money-mad capitalistic America.

Oh, yeah! Well, listen to this. Some months ago Moscow purchased from Israel 100 million oranges. The purchase price was 2½ million dollars or 2½ cents apiece.

These oranges were sold by the Russian government to the Russian housewife for 47 cents each, thus producing a neat profit of 45 million dollars on the investment. Such poor pikers are the ignorant Americans!

No Bull.—All the bull from Russia these days reminds us of a letter of complaint received by a railroad company from an indignant farmer whose acres adjoined their right-of-way. He wrote:

"Your railroad run over my bull at the 20-mile crossing on Wednesday. He air not ded, but mout as well be. And I want your sexton boss to report him ded and pad for . . . He air totally unqualified to be a bull and he air maimed up too bad to be a steer, and he air too dam tuff for beef, so I want to report him ded and pad for.

P.S. He were a red bull, but he stands around looking mity blue now."

BRIANT SANDO

HEADING SOUTH!

The Tuna seiner New Sea Rover heads out of the main channel of Los Angeles Harbor, bound for fishing grounds off Mexico. The Rover may go as far south as Peru in its search for Tuna. Thomas Jancovich, Harbor oil distributor, waves from dock.

—Los Angeles Times photo

The LIFE of a tuna fisherman

By RAY HEBERT

THE New Sea Rover got a fresh coat of white paint the other day. They trimmed her off in brown and she was ready to put to sea again.

Her skipper, Nick Marincovich, laid in a fresh supply of cigars and he was ready, too.

So was the crew. They hauled aboard a thousand items—ranging from a print of a 15-year-old movie to a new pair of rubber boots for one of the deck hands—and the New Sea Rover was geared for another fishing trip.

"Everything's set," Nick said, grinning. "Everything, that is, except the tuna. But we'll know soon."

Maneuverable as a Tug

Squat and businesslike, the Rover rocked gently at her dock in Los Angeles Harbor. She appeared top-heavy under the thicket of heavy booms and ocean-going crow's nest mounted on her mast, but with power up she was as maneuverable as a tugboat.

She works hard catching tuna and skipjack and she's usually loaded down with them. But there wasn't so much as a whiff of fish on board just before sailing time—unless it came from the frozen salmon and shrimp in the galley ice box.

Outfitting the boat, seeing that everyone shows up for sailing time, wondering how the catch will be—it was all an old story for Nick Marincovich. The crew calls him Barney. He wears glasses and looks like he would be more at home selling insurance than chasing tuna, but he knows the fishing business like a man twice his age.

Tough on the Wives

Although he is only 36—young compared with most professional fishermen—he operates one of the largest and most envied purse seiners in the Harbor's big tuna fleet.

"The best thing about the Rover," one crew member said, "—it's a happy boat."

"Thank Barney," another added. "Most of us been with him since he got the Rover."

That was Tony Mellusi talking. Tony is a lifelong fisherman like the rest of the 11 crewmen and has been on the Rover for six years, since she first came out of the shipyard.

"It's tough on wives, this fishing," he admitted. "But it's a good life—if you're on a good boat. Even if you have a bad season, if you have a good skipper you want to stay aboard."

Like other boats in the tuna fleet, the Rover is always busy. Her crew figures they spend nine months of the year away from home. And they are on the go the remaining three, unloading their catches and readying the boat for her next voyage.

"We're one of the few purse seiners here in San Pedro that range down as far as Peru," Nick said proudly. "Most of them fish the Mexican waters, but it's getting so you have to go farther and farther away, and stay out longer, to make the trip pay."

A $450 Payday

Nick tries to make Peru, Colombia and other South American fishing grounds in November and December. It's summer down there then.

"Last trip we were in Mexican waters, the Gulf of California," he said. "Pretty long trip—stayed out 67 days, and came back with 63 tons of tuna. Not too good."

Each crewman, he said, averaged about $450 on that trip but it's pos-

sible for them to make as much as $1200 or $1300 on a voyage lasting anywhere from 20 days to two months.

The Rover had been in port 11 days and was heading back to the gulf because radio reports from vessels fishing there indicated that the purse seiners were filling their nets after a slow start.

Nick's pretty wife, Geraldine and his two children, Ronnie, 9, and Winifred, 11, would have liked him to stay in port longer. They have a comfortable, nicely furnished home in San Pedro.

"They understand, though; they know a fisherman can't make money sitting at home watching television," Nick said.

He allows a 72-hour run to the mouth of the gulf, timing the departure from San Pedro so they arrive on the prospective fishing grounds early in the morning, to get in a full day, and perhaps night, of fishing.

On a Share Basis

The crew works each trip on a share basis with all hands turning out to man the nets when a likely school is spotted.

"Tony Mellusi always takes the wheel," Nick explained. "And I hop up to the crow's nest to run things."

From there he gets a sweeping view of the fishing grounds, shouting commands as the Rover lays out its 2400-foot long net in a huge circle around the darting fish. Then the straining, sweating crewmen draw in the bottom of the net—pursing it—and haul in their catch.

They brail the fish next, scooping them out of the water with netted hoops attached to the ends of long, smooth eucalyptus branches.

"Our biggest worry is bad weather, of course," Nick explained. "It's just not worth trying to work if the weather's too rough. We got to look out for sharks, too. They cut the tuna to bits and even rip through the net, if we're not careful."

Low in the Water

The Rover has the equipment—the net piled on her stern deck is worth $30,000 alone—and facilities to take aboard 10 tons of tuna in an hour's fishing.

As soon as they leave the water, the fishy prizes are sharp frozen in the boat's modern brine refrigeration tanks where they are held fresh and juicy for weeks. Eventually, they wind up in casseroles and salad sandwiches in homes and restaurants across the country.

Weighted down under a full catch, the Rover can freeze 142 tons at steady 18 to 26 degree temperatures without ice packing, still a standard procedure on some boats.

"That's how the wives can tell whether we've had a good trip—if we're weighted down," Nick said. "No, we don't fly any special flag coming into port. Our wives are always waiting on the dock and if they see the Rover riding low in the water—well, they know we've caught a few tuna."

Nick has been fishing for a living since he was in his middle teens, but not always for tuna. He got his start on the Columbia River in Oregon — gill-fishing for salmon — and branched out to deep water when he came to San Pedro in 1937.

"Worked as a deck hand for a while, then began running boats for other people," he said. "Finally got one of my own. The Rover—I've had her since 1950. Bought a half interest in her with a packing concern. She was only two years old then but she's still one of the newest boats in the fleet.

"You know, the Rover was built for $250,000, but you sure couldn't duplicate her for that now."

With an over-all length of 94 feet, she is as compact as a fitted suitcase and just as serviceable. Every foot of space is utilized but there is no feeling of cramping—"unless it's in the brine tanks when they're loaded with tuna," Nick laughed.

Full Equipment Carried

His quarters are directly behind the wheelhouse in a combination stateroom, chartroom and radio room. He has a full complement of navigating equipment—radio direction finder, depth sounder, almost everything that a large seagoing merchant vessel carries, including a sextant.

"I keep a sextant aboard, all right, but I don't know if I'd know how to use it," Nick grinned. "We stick pretty close to the coastline and hardly ever have to do any celestial navigating. Get our bearings on light-

(Continued on page 19)

LIGHT WORK ALOFT

Mike Mavar, crewman on the tuna clipper New Sea Rover, climbs aloft to repair lights used in night fishing. Like other boats in the tuna fleet, the New Sea Rover is always busy and must be kept "shipshape and Bristol fashion." Nine months in each each year she's out at sea.
—Los Angeles Times photo

The John R. Manning, experimental purse seiner of the Pacific Oceanic Fishery Investigations.

Experimental Tuna Purse Seining In the Central Pacific

By GARTH I. MURPHY
and EDWIN L. NISKA

THE general scarcity of live bait in the central Pacific limits live-bait fishing for the available stocks of surface tuna and makes it desirable to develop some alternate method of capture. Attempts to gill net skipjack in the Hawaiian Islands where there is a commercial live-bait fishery have met with little success. Purse-seine fishing, which accounts for about 12% of the California landings of tuna has been tried intensively by the Pacific Oceanic Fishery Investigations of the U. S. Fish and Wild-Life Service, centered around the Phoenix, Line, and Hawaiian Islands where surface schools of tuna are commonly found.

Description of Gear

The *John R. Manning*, a West Coast-type purse seiner, was used for all purse seining (see cut). The vessel's essential characteristics are:

Lenth	86 feet 6 inches
Depth	12 feet 8 inches
Displacement	237 tons
Beam	22 feet 6 inches
Cruising speed	7¾ knots

Three purse seines were used during the *John R. Manning's* operations. Seine No. 1, a standard West Coast tuna net made of cotton thread in San Diego, Calif., was 360 fathoms long with a lead line measuring 340 fathoms. It had a depth of approximately 31 fathoms. The main body consisted of five strips of No. 48-thread 4½-inch mesh, each 100 meshes deep. The lead-line strip was No. 84-thread 7-inch mesh, 50 meshes deep, and the selvage strip was No. 84-thread 4½-inch mesh, 20 meshes deep. The lead line was weighted with 32 4-ounce leads per fathom. The cork line contained 20 corks per fathom in the main body.

Mr. Murphy and Mr. Niska are research specialists with the Fish and Wildlife Service, Honolulu, T. H.

After tuna escaped repeatedly, tests showed that the lead line dropped slowly and reached a depth of only 20 fathoms. It was deemed advisable to construct the seine deeper and adjust it to sink more rapidly. Consequently, seine No. 1 was modified by removing one strip of No. 48-thread 4½-inch mesh cotton adjoining the 7-inch heavy mesh lead-line strip and substituting two strips, each 100 meshes deep, of No. 40/16 cabled linen thread, 4½-inch mesh. The theoretical depth of this seine was thereby increased to approximately 36 fathoms. However, drop tests indicated that the modified net reached a maximum depth of only 30 fathoms so the weight on the lead line was increased to 10½ pounds or 42 4-ounce leads per fathom. The first 50 fathoms of the seine to leave the vessel—the bow end of the net—had 44 leads per fathom for faster sinking.

The third and final seine to be used was constructed of boiled linen netting. It was 400 fathoms long with a maximum fishing depth of 39 fathoms (46.7 fathoms stretched mesh). The lead line measured 381 fathoms. The main body of this seine was 7 strips, each 100 meshes deep, of No. 40/16 cabled linen thread 4½-inch mesh. The lead-line strip, 50 meshes deep, was made of No. 6.5/12 cabled linen thread 7-inch mesh. The selvage strip was No. 60 medium-lay cotton thread 4½-inch mesh, 8 meshes deep. The web was hung in the ratio of 10 fathoms of cork line to 9½ fathoms of lead line, with the exception of the stern 10 fathoms of the seine which were hung in a 10:10 ratio. Nine extra meshes per 10 fathoms of netting were allowed as slack on the cork line.

The cork line of the linen seine contained 22 6-inch diameter cork per fathom in the main body of the net. At each extremity of the seine there were 14 corks per fathom for a distance of 30 fathoms. The lead line was weighted with 17 8-ounce leads per fathom throughout. For ten fathoms on each end, the lead line was reinforced with 21-thread manila rope. The taper on the towing end of the linen seine was made in the form of a 45° angle and differed from that in the cotton seine which was in the form of a 25° angle. The breast-line hanging was essentially the same as for the cotton seine.

Seining in Phoenix and Line Islands

Phoenix Islands: The *John R. Manning* visited the Phoenix Islands on two occasions. During the first period, July to September, parts of 16 days were devoted to scouting for tuna. This activity centered around the islands of Canton, Birnie, Sidney, Phoenix, Enderbury, McKean, Gardner, and Hull, and Carondelet Reef. During the 64 hours of actual scouting, 11 schools of tuna were sighted—4 of skipjack, 2 of yellowfin, and 5 unidentified. These schools either outran the vessel or were too close to coral reefs to permit setting the net without considerable risk. The greatest handicap during this period was the rough sea. Strong winds prevailed during 18 of the 40 days and either precluded operations entirely or limited them to the lees of the islands.

In the second visit to the Phoenix Islands, January 24 to February 5, scouting was carried out at Canton, Enderbury, Phoenix, Sidney, and Hull Islands. In these 13 days, 29 hours of 9 days were devoted to searching for tuna. Four schools of unidentified tuna were sighted, but they could not be set on. Three practice hauls were made, however, during this period. Again strong winds prevailed through the period.

It appears that the prevailing high

winds limit purse seining in the Phoenix group to the lees of the islands. Here schools of tuna are relatively scarce and frequently too close to the reefs for sets to be made without great hazard.

Line Islands: The purse-seining potential of the Line Islands was surveyed on five separate occasions.

In Cruise 2, waters adjoining the following islands were investigated: Kingman Reef, Palmyra, Washington, and Fanning. During this 47-day period, parts of 38 days—a total of 310 hours—were devoted to actual scouting for tuna. Twenty-eight schools of tuna were sighted, including 12 of yellowfin, 8 of skipjack, 5 unidentified, and 3 of mixed species. Two sets were made.

One set on a school of yellowfin off Fanning Island was unsuccessful. The second set was made off Christmas Island on a mixed school of yellowfin and skipjack and was also unsuccessful, although fish were in the net when pursing began.

Throughout this period (April 22-June 7) the weather was generally favorable. No winds over force 4 were encountered; chiefly force 3 and lesser winds prevailed.

During Cruise 3 in September, the following islands were scouted: Jarvis, Christmas, Palmyra, and Kingman Reef. Scouting for tuna was done during 85 hours of 9 days. Sighted were 8 schools of yellowfin and 6 schools of unidentified tuna. One set was made off Christmas Island on "breezing" tuna, but no fish were captured. Another set was made under bird signs, and again no fish were taken. Sets were also made off Christmas Island on yellowfin tuna; on both sets fish were still inside the net when pursing commenced, but they apparently sounded out of the net.

The *John R. Manning* scouted areas near Kingman Reef, Christmas, Fanning, Washington, and Palmyra Islands from November 1 to December 1. During 226 hours of actual scouting distributed over 18 days, 9 schools of yellowfin tuna, 7 schools of skipjack, and 6 schools of unidentified tuna were sighted. Although most of these schools were either too close to the reefs or too elusive to permit a set, one unsuccessful attempt was made at Fanning Island on a school of yellowfin. During the set the fish sounded and escaped after pursing began. Four practice sets were made in the area. Again high winds were a handicap, largely limiting operations to the lees of the islands.

The waters off the islands of Jarvis, Christmas, Fanning, Washington, Palmyra, and Kingman Reef were prospected in February. During 104 hours of actual scouting, only 1 school of yellowfin, 2 of skipjack, and 2 of mixed yellowfin and skipjack were seen. Only one was large, and it could not be set on because of the proximity of the Fanning Island reef. The other schools were very small and outran the vessel. Four sets were made on this cruise, two for practice and two on milkfish (*Chanos chanos*). The latter two were unsuccessful.

The final attempt at purse seining in the Line Islands (Cruise 6) was made in April and May, when waters in the vicinity of Kingman Reef, Palmyra, Fanning, Christmas, and Washington Islands were explored. Parts of 28 days—208 hours—were devoted to scouting for fish. Schools sighted were 2 of yellowfin, 2 of skipjack, and 2 of unidentified tuna. Five practice sets were made—2 on visible fish, 1 under bird signs, 1 on porpoises, and 1 on fathometer indications. No fish were taken, but fish were still in the net as pursing began.

In summary, 5 trips distributed over one 12-month period were made to these islands. During these trips, 933 hours were devoted to scouting for tuna. Strong winds frequently limited operations to the small lees of the individual islands. Sighted were 75 schools of tuna, but either because of the wildness of the fish or the proximity of reefs, it was possible to set on only 8 of them. On six of these sets fish were in the circle as pursing began, but sounded out before pursing was completed. Tuna purse seining in the Line Islands, therefore, appears to be a problematical venture.

Skipjack caught in the linen seine as described in this article.

In the Hawaiian Islands

In June, during 122 hours of actual scouting, 6 schools of skipjack were located, but because of their speed and erratic behavior the *John R. Manning* was able to approach only one and this was not set on.

More extensive trials were made in July and August, when the linen seine was substituted for the cotton net used previously. In order to insure maximum efficiency in handling the gear, the captain, a skilled California purse-seine fisherman, was engaged for this and the subsequent tests. A total of 213 hours distributed over 23 days was devoted to scouting for tuna. This activity occurred in the lees of Hawaii, Maui, Lanai, Oahu, and Kauai, with one exception when weather conditions permitted scouting off the windward (NE) side of Oahu. Sixty schools of tuna were sighted on this cruise, and with the exception of 4 schools of yellowfin sighted off the lee of Hawaii, all were identified as skipjack.

The behavior of the schools was very erratic so that even though a serious attempt was made to set on 57 of them, it was possible to "shoot" the net on only 7 schools—1 of yellowfin tuna and 6 of skipjack. Some of the 57 schools sounded on approach, some changed course so frequently it was impossible to maneuver into a setting position, some schools scattered on approach. and some merely outran the vessel.

Combined Purse-Seine and Live-Bait Operation

A cruise to test the feasibility of seining Hawaiian tuna in cooperation with a live-bait boat was made. A small Honolulu sampan, the Momi, was engaged as a chum boat. Seven days were devoted to catching bait, 6 to fishing for tuna, and 5 to travel between baiting and fishing localities.

The fishing procedure followed a regular pattern. After locating a school, the *Momi* attempted to con-

(Continued on page 20)

The San Diego Waterfront

By ROBERT K. LAWSON

SUSPENDED jail sentences and fines were handed out here in Municipal Court last month to 15 San Diego fishermen following admissions they made false applications to the State Department of Employment to obtain compensation.

Special Investigator S. W. Wilson, of the Department in Los Angeles, said the arrests on misdemeanor charges resulted from an extensive investigation of 1,500 declarations by fishermen in the Southern California industry, including about 500 in the San Diego area.

Wilson said 260 violations, of which 60 were in San Diego, have been uncovered. Money paid by the State on fraudulent declarations has reached $25,000 thus far, and is expected to exceed twice that figure before the investigations are concluded.

Complaints against 140 have been filed to date, and more arrests are expected in San Diego, Wilson said. The fishermen declared they were unemployed while actually they were working and receiving pay in addition to the State benefits.

Judge James C. Toothaker meted out suspended sentences, fines, and restitution in the following amounts to the 15 men:

John Asaro, 30-days, $50, $75; Francesco J. Asaro, 10-days, $25, $25; Giovanni Balistreri, 30-days, $50, $125; Gaetano D'Acquisto, 30-days, $25, $75; Salvatore D'Acquisto, 30-days, $25, $75; Salvator Giacalone, 10-days, $25, $50; Girolamo Giacalone, 10-days, $25, $25; Tony Giacalone, 30-days, $25, $50; John F. Lococo, 10-days, $25, $25; Joseph V. Pisciotta, 60-days, $50, $150; Vincent J. Pisciotta, 30-days, $50, $100; Guiseppe Sanfilippo, 30-days, $25, $125; Mariano Sanfilippi, 30-days, $25, 125; Guiseppe Valanti, 30-days, $50, $125; and Tony Vitrano, 60-days, $25, $125.

Albacore fishermen will be afforded a new type of bait this year in San Diego, according to Tex Brock, of Brock's Bait Barge: salted alive and refrigerated anchovies,

available in five gallon cans. Salting the fish alive is said to preserve the insides and eliminate the sharp freezing which makes bait stiff and gives it an unnatural action in the water.

Most bait formerly supplied in the frozen state was salted after the fish were dead, which allows rapid deterioration. Another innovation, at the Barge this season will be a complete line of bone and feather jigs, Depth Gliders, shock snubbers and other fixtures. Of special interest to private boat owners: Brock's Bait Boats will now service the La Jolla and Mission Beach areas, in addition to the regular service in outer San Diego Bay.

* * *

June claimed two more tuna clippers. First the Santa Barbara sank 200 miles south of the Panama Canal. All 12 crew members escaped in life boats and were picked up by a freighter and taken to Panama. They flew to San Diego from that port.

The loss was estimated at nearly a half million dollars, with $400,000 said to be the replacement value of the boat, and $100,000 for the ship's cargo of tuna. The Santa Barbara fished for Sun Pacific, Inc., of San Diego. She was enroute to San Diego when the mishap occurred.

No reason for the sinking has been announced. Skipper Charles Forster, of San Diego, said, "She just took a fast list and sank." Crew members saved nothing except the clothes they wore.

The crew list showed Charles Forster, skipper; Geraldo da Silva, fish captain; also Anthony Balelo, Francisco Gonsalves, Antonio de Brum Goulart, Carlos E. Guevara, Augusto M. Rebelo, James M. Siegel, and Lawrence Van Buren, all of San Diego. Also listed were: Albert Barbosa, Portugal; Minora Oto, Los Angeles; and Alberto Valadez, of Ensenada.

* * *

Second June loss was the 175-ton tuna clipper Anna M, which burned and sank 20 miles off San Martin Island and 140 miles south of San Diego last month. Fire of undetermined cause broke out in the engine room and the man on watch there barely escaped the flames.

The 12 crew members launched the skiffs by hand when it became evident there was not time to get them over the side properly. All personal belongings were lost, and the skipper salvaged only his sextant.

The fire brought the Scripps Institution of Oceanography research vessel Spencer F. Baird to the scene after the crew had been picked up by a Mexican freighter. They were transferred to the Baird, and subsequently to the merchant freighter Maiden Creek and taken to Wilmington.

The replacement value of the Anna M was estimated to be approximately $340,000. The vessel carried about 75% of her cargo capacity at the time of the sinking. Value of the fish was calculated to be about $50,000, and included both skipjack and tuna.

James F. Potts, marine surveyor, gave the list of crew members aboard as Theodore (Ted) Sorensen, licensed master; John Lauriano, chief engineer; William Magellan, George Serrano, Antone Rego, R. J. Clark, James Holland, Jack Bohannon, Richard Romero, Manuel Pelicas, Luciano Sacci, and Joquin Xavier. All were San Diego residents.

* * *

Lillian Brown, 17, portrayed Saint Isabel, cannonized Portuguese Queen

in the annual San Diego Portuguese-American colony at the Feast of the Holy Ghost on Pentecost Sunday.

The event commemorates a vow made more than 600 years ago. It was the wish of the Queen, who reigned during the 13th century, that the poor should be fed at Pentecost. Through her efforts the Confraternity of the Holy Ghost was formed, and members voted then the practice should be continued forever.

President of the feast this year was Manuel Neves, skipper of the tuna clipper Constitution, named as the honor boat. The vessel was decorated in lights from stem to stern, and a cross was carried on the masthead.

Named as maids for the Queen were Dorothy Silva and Gloria Machado. Four attendants were Marjorie Freitas, Mary Nunes, Joan Sebastian and Josephine Soares. Maria Theodore was the boat queen.

* * *

A damage claim for $12,500 was filed in Superior Court here last month against the owners of the tuna clipper Gem of the Sea. The suit was filed in behalf of Joseph Z. Gonzalves by his mother Mrs. Dolores Gonzalves. The complaint charged negligence upon the part of the owners, accusing them of not providing a safe place to work and failure to warn Gonzalves of dangers involved.

The 20-year-old Gonzalves lost his right hand, bitten off by a shark, while gathering bait for the clipper in Chame Bay, Republic of Panama.

Gonzalves was with other fishermen in a skiff being towed by the clipper's motor launch. He reached into the water to pull up the net. The complaint said the shark severed Gonzalves right hand at the wrist.

* * *

Newport fisherman D. D. Foreman, skipper of the jig boat Arline F, was credited with catching the first albacore of the 1954 season according to radio reports. This was later confirmed by the High Seas Tuna Packing Company, in San Diego, for which the boat fishes. The location was given as the 213 Spot, about 75 miles south of San Diego.

The first fish, picked up at 8:00 a.m., June 23, weighed 7 pounds. Four hours later five more fish were put aboard the same boat. The news sent San Diego jig boat fishermen racing for the fishing banks.

Meanwhile the price of albacore for the new season remained stymied with canners offering $400 and the fishermen holding out for $450 per ton. Most persons close to the situation believe the price may stabilize somewhere around the $425 figure.

The Van Camp Sea Food Company was the first canner in the field to make an official offer to the fishermen of $400 per ton. According to Phil Bertram, fleet manager at Van Camp's, this was considered a good figure inasmuch as this was the starting figure last year. The offer was refused by the fishermen's cooperative associations.

Subsequent meetings were held up and down the coast by the cooperatives with the biggest concentration in San Diego where three successive meetings gained a combined attendance of more than 1,000 fishermen.

Tuna and skipjack landings at Southern California canners totaled 11,597 tons for the month of May. Van Camp's San Diego and Terminal Island operations received 3,923 tons; High Seas, San Diego, and Star Kist, Terminal Island, got a total of 3,514 tons; Westgate California Tuna had 2,770; California Marine 545; Coast Fishing 150; Pan Pacific 425; and South Pacific 270 tons. The latter four operations are in the Wilmington area.

San Diego Distributor for Hercules Diesels

Hercules Motors Corporation, Canton 2, Ohio, have announced the appointment of Westerlund & Lange, San Diego, California, as distributors for the complete line of Hercules Marine Diesel Engines, 10 models ranging from 12 to 500 H.P.

Westerlund & Lange, a 50-year-old firm in the San Diego area, offers many special services in addition to competent and experienced personnel, adequate stocks of repair parts and excellent service facilities providing "round the clock" service on repair parts and trouble shooting. They are a one-stop marine supply center for pleasure boats and commercial craft in the San Diego area. A portable machine shop provides quick and complete "on the spot" service throughout the San Diego area. Many repairs can be made without removing engine from hull.

Westerlund & Lange maintains a downtown San Diego store as well as branches in East San Diego, Escondido, La Mesa, Oceanside, Pacific Beach, National City, and Fallbrook. In addition, an outside sales force continually contacts marine dealers, boat builders and sport fishing piers.

Bludworth's "Kingfisher"

A new fish finder, the "Kingfisher" combination super-sensitive echo recorder and cathode ray tube fish finding viewing unit, is now available in the United States through Bludworth's offices in principal seaports. It is finding excellent usage on commercial fishing vessels, particularly for bottom fishing, because it can detect the presence of fish at all depths down to 240 fathoms and is a proven and reliable instrument for deep sea operations.

Essentially this new fish finder consists of a new electronic super-sensitive recording echo sounder of special design in combination with a cathode ray tube viewing unit which can be quickly read and interpreted. Its simplicity and reliability will appeal to fishermen whose profits depend upon large hauls in the shortest possible time under all weather conditions.

The "Kingfisher" enables the fisherman to tell where fish are located, and whether there is a single large fish or a school under his vessel. It is also proving invaluable in navigation, finding wrecks or rock piles when functioning solely as a depthometer.

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EBB 'n FLOW

Fred Roper Promoted

Fred R. Roper has been appointed assistant manager of the advertising department of Standard Oil Company of California, it is announced by M. A. Mattes, advertising manager in San Francisco.

Roper, a graduate of the University of California, was a newspaperman from 1925 to 1932, when he joined Standard as editor of the employee publication of Standard Stations, Inc. Later he was attached to advertising activities, working in recent years on motor and industrial oils and lubricants and foreign trade.

He is a member of the Advertising Club of San Francisco and director of the Northern California Industrial Advertisers Association, which he served as president from 1949 to 1951.

Pack of Canned Mackerel

The pack of canned mackerel and jack mackerel in the United States during 1953 totaled 596 thousand standard cases (45 pounds each), valued at over 5 million dollars to the canners according to revised figures issued by the Fish and Wildlife Service.

This was a decrease of 61% in quantity and 56% in value compared with the previous year and represented the smallest pack since 1932 when the pack was 94,700 cases. The largest production on record was in 1947 when 1,755,000 cases, valued at 15 million dollars was packed.

The last previous pack of mackerel to fall below one million cases was canned in 1946. The decline in production in 1953 resulted from a failure of both Pacific and jack mackerel to appear in normal volume.

Diesel Engine Ratings

The National Supply Co., Engine Division, Springfield, Ohio, announces that its Model 65 supercharged 6 and 8 cylinder marine diesel engines are now available with output ratings of 1325 and 1765 Bph respectively. The higher ratings are the result of a change in supercharging, which raises the BMEP to 152 psi. Bulletin No. 5111 lists the new ratings of the two types of engines.

Improved P & H Diesels

A complete line of improved two-cycle marine diesels has been announced by P&H Diesel Engine Division. Horsepower now ranges from 58 to 255, in two-, three-, four- and six-cylinder sizes. The new models with their very low weight-to-horsepower ratio are particularly well suited for powering work boats and fishing boats.

While of the same basic design as the former models, the new 36% higher-performance engines are said to carry 52 major advancements and refinements. For information and specifications, write Harnischfeger Corporation, Diesel Engine Division, Crystal Lake, Illinois.

Cummins Expands

Opening of the new 30 foot conveyorized production line at Cummins Engine Company, Inc., Columbus, Indiana, signalled the completion of the building portion of the Company's $7,000,000 post war expansion program. This modern assembly line is housed in a completely air-conditioned, dust proof structure. Cummins Diesels come down the moving line, carefully assembled under strict quality control measures.

Fuel Injector Changes by Detroit Diesel

The Detroit Diesel Engine Division of General Motors has announced several changes contributing to longer life and increased operating efficiency in GM unit fuel injectors used in its line of Series 71 Diesel engines.

New engines such as are used in marine propulsion and auxiliary power units now have the improved injectors as they leave the factory and parts kits are available to incorporate the same improvements into injectors now in use.

Hercules Motors on Coast

To better serve the west coast area, Hercules Motors Corporation, has opened a new and greatly expanded Los Angeles branch at 2336 South Garfield Ave. Easily accessible from all points of Los Angeles, the new location which is in the heart of an expanding industrial area is situated just east of the Santa Ana Freeway at the intersection of Garfield and Malt between Washington Blvd. and Telegraph Road. Here gasoline, gas and diesel engines and power units are available, also a large stock of service parts. West coast operations are under the supervision of William Brumback.

Duty on Fish Sticks

The U. S. Bureau of Customs has released its decision on fish sticks and blocks according to information supplied by the Fish and Wildlife Service. The decision provides in substance for the following dutiable status:

1. *Fish blocks*, consisting of cod, haddock, hake, pollock, cusk, and ocean perch (rosefish) which have been skinned, boned, and filleted and frozen into blocks will be dutiable under Tariff Paragraph 717 (b) at 1⅞ cents per pound for that quantity received under the quota, and 2½ cents per pound for that quantity which is imported over the quota.

2. *Breaded fish sticks, cooked or uncooked, not containing added oil* will be dutiable under Paragraph 720 (b) at 1 cent per pound net weight if in bulk or in immediate containers weighing with their contents over 15 pounds each; and at 12½% ad valorem if in immediate containers weighing with their contents not more than 15 pounds each.

3. *Breaded fish sticks, cooked or uncooked, containing added oil* resulting from the presence of oil in which they were cooked will be dutiable under Tariff Paragraph 718 (a) at 30% ad valorem when valued over 9 cents per pound including the weight of the immediate container.

This decision makes no change in rates of duties which were being applied prior to this time. Details of the Bureau of Customs Decision will be provided in a subsequent report.

TIDES OF THE INDUSTRY

Canners Directory

The 1954 Canners Directory has just come off the press. The 46th of these annual compilations consists of 254 pages, bound in stiff linen covers. Canning firms and their headquarters addresses are listed by states along with plant locations and products packed in each. Price is $1 per copy to members and $2.50 to nonmembers from the National Canners Association, 1133 20th Street, N.W., Washington 6, D. C.

New Marine Varnish

An all new Marine varnish is said to possess phenomenal resistance features and an exceptionally long lasting gloss. Known as Varna-Plate, this new development is for all water craft surfaces exposed to hard wear, weather, abrasion or scratching.

Non-toxic, non-inflammable and impervious to sunlight, it dries to a hard glass-like finish which remains even under the most adverse conditions of weather or service and holds maximum resistance to heat, wear, water, chemicals, solvents and salt.

Will not flake, chip, check or peel. Wood surfaces coated with this new product may be dented sharply without lifting or scarring the coating. Recommended for boat decks, hulls, cabins, masts, seats, furniture. Distributed by Spearhead Boiler Plug & Specialty Co., 704 Woodland Avenue, Cleveland 15, Ohio.

New Type Paint

To meet the demand for a flat finish possessing greatly improved performance characteristics, Pittsburgh Plate Glass Company has announced the development of an alkyd-type flat wall paint possessing qualities of durability, washability, mar resistance, uniformity of appearance, and ease of application never before found in flat wall paints. The product was made possible by formulating with alkyd resin type vehicles usually associated with enamels, according to Joseph C. Thompson, Jr., general paint manager.

"To be known as Wallhide PBX Flat Wall Paint, this latest development in paint technology covers evenly in just one coat over previously painted surfaces. No primer is required because it is self-sealing. It is tough and has no odor."

Little Radioactivity in Fish

The survey of radioactivity in the Marshall Islands tuna grounds by the research vessel Shunkotsu Maru has been reported. For a time some excitement was caused by the discovery of sea water giving 450 counts on Geiger counters, but that water was collected along a current boundary and appears to have been especially radioactive. As the vessel moved south the reactions declined and the report on the 2nd of June indicated counts of only 10, from which it appears that the sea water is not at all dangerous.

There is almost no contamination detectable in the air. The plankton, about which some concern had been felt, has been examined for radioactivity both fresh and in the form of ash, and while some radioactivity has been found in the plankton itself, the concentration of plankton in the southern sea areas is so sparse that in order to get 1 gram of plankton ash, it is necessary to strain many thousands of tons of sea water. Consequently, even though the plankton itself may be radioactive, it is scattered throughout so much water that it is not thought that it would have much effect.

The scientists aboard the *Shunkotsu Maru* have lately examined fish and have found no reaction from the flesh. Some radioactivity was detected in the liver and other internal organs, but the overall results of the investigations to date show no cause for worry. If fishing vessels are kept clean and if the internal organs of the fish are thrown away, it looks as if we may conclude that there is no problem since the flesh will not give any reaction.

Old Age Security

The Committee on Ways and Means of the U. S. House of Representatives tentatively agreed to extend old age security coverage to all segments of the fishing industry. Under present law, persons engaged in fishing and similar activities are excluded from old age security coverage unless their services are performed in connection with commercial salmon or halibut fishing or on a vessel of more than 10 net tons.

The committee adopted a provision which would repeal this exclusion and cover employment in fishing and similar activities generally. It is expected that this provision will extend old age security coverage to approximately 30,000 persons.

Canned Fish Production

Preliminary statistics on the fisheries of the United States and Alaska for 1953 have been released by the Fish and Wildlife Service. Here are the figures on canned fish production:

Preliminary data indicate that the 1953 pack of canned fishery products totaled 790 million pounds compared with 815 million pounds in 1952. Large decreases occurred in the packs of mackerel, salmon, and Maine sardines.

PACK OF CANNED FISH PRODUCTS, 1953 AND 1952

Item	1953(a) Standard Cases	1952 Standard Cases	Record Pack Year	Record Pack Standard Cases
Tuna and tunalike fishes (b)	9,440,000	9,120,889	1953	9,400,000
Salmon	3,925,000	4,464,347	1936	8,965.177
Sardines:				
Maine	2,780,000	3,530,876	1950	3,844,164
California (pilchard)	62,000	106,746	1950	5,070,805
Mackerel and jack mackerel	595,000	1,525,353	1947	1,754,950
Anchovies	790,000	438,988	1953	790,000
Shrimp	970,000	817,910	1937	1,434,894
Animal food	4,175,000	3,497,733	1953	4,175,000

(a) Preliminary
(b) Includes pack in Hawaii and Puerto Rico.

PROGRESS & PRODUCTION

GM Diesel Power

Changes in design which have increased the output of General Motors' single 6-110 Diesel engines to 300 HP maximum and 230 HP continuous have been announced by GM's Detroit Diesel Engine Division.

The increases totalling 25 and 17 HP, respectively, help maneuverability in heavy seas and cut running time to and from fishing grounds.

Basically the power increase in these two-cycle Diesels is the result of freer "engine breathing" and higher engine speeds. This has been accomplished in part by increasing the number of ports in the cylinder liners and grouping them to form larger "figure 8" shaped openings.

New Radiotelephone

New Bludworth Marine Radiotelephone, Model BRT-1025, has a built-in power supply . . . 4-channel crystal controlled 18-watt transmitter in accordance with latest F.C.C. rating . . . includes tunable broadcast receiver for music, weather reports, news . . . operates on 6 or 12 volts DC . . . daytime range of 35-50 miles and nighttime range of 125-150 miles . . . reasonably priced. Write Bludworth Marine, 92 Gold St., New York 38, N.Y.

Marine Radio-Telephone Equipment

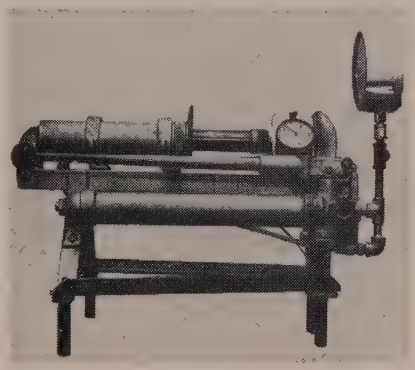
A line of "Allied" marine radiotelephones was developed to withstand rugged usage in tug-boats and fishing vessels. These compact units, engineered to conserve space, incorporate push-to-talk microphones and crystal controlled receivers for positive operation.

Four different transmitters are available. Accessory equipment includes: noise limiter, remote station and marine antenna. Additional information from Allied International Inc., 230 Park Avenue, New York 17, N. Y.

Grover Marine Air Horns

Grover Products Company has announced the appointment of The Marin Company, 2414 East 57th St., Los Angeles 58, Calif., as national distributor of the entire line of Grover Marine Air Horns and allied equipment.

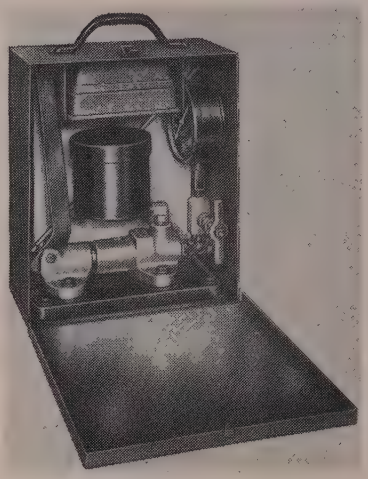
Grover Marine Air Horns are manufactured solely for marine use. They are constructed entirely of naval bronze for long wear under severe corrosive conditions. They are designed to operate on air, gas or steam pressure; 41 types and combinations to fit every marine application.



New Pressure Tester

A new experimental Tester has been devised by technologists in the canning industry. Primary function of this portable device is to determine the *amount* of pack in typical cans where oil is employed as a filler. By use of the equipment, it is felt that a *standardized* pack can be worked out.

In conducting actual tests, a sealed can of tuna or other fish is opened and the contents carefully placed, oil and all, into a metal cylinder which is positioned against the back plate. The hydraulic ram, which is a careful fit, is then brought up against this charge in the cylinder, and load is applied. As the material is compressed to a prescribed degree indicated by a hydraulic gauge, the oil is caught in a small cup below the cylinder. The oil is then measured and provides valuable information in evaluating the ratio between actual food content and filler. Made by W. C. Dillon & Co., Inc., 14620 Keswick Street, Van Nuys, Calif.



Nozzle Maintenance Outfit

A new portable nozzle cleaning and testing outfit being made available by American Bosch Corporation, Springfield, Mass., is of special interest to those responsible for the maintenance of Diesel engines.

The outfit consists of a compact metal carrying case that contains both the Bosch Nozzle Test Stand and a Nozzle Cleaning Kit so that Diesel injection spray nozzles can be tested and cleaned right on the job conveniently and efficiently.

A filter protects the nozzles from being accidentally injured by dirt. The fuel oil reservoir is of ample size and a pressure gauge reading to 5000 PSI facilitates setting of nozzle opening pressures. This outfit helps detect nozzle conditions which may cause excessive smoke, increased fuel consumption and loss of power.

Bronze Bilge Pump

A new electric bilge pump, of solid bronze construction throughout (except motor), is now available.

The impeller, impeller housing and motor support bracket of the Marin Bilge Pump are heavy duty bronze castings designed for a life time of service. Available for 6 or 12-volt electric systems. It will lift in excess of 15 feet and will pump approximately 540 gallons per hour.

Literature and prices available to boat owners and dealers from The Marin Company, 2414 East 57th St., Los Angeles 58, California.

Life of a Fisherman

(Continued from page 11)

houses, landmarks and other fixed objects."

The crew sleeps below the wheelhouse in a common "dormitory" banked by a double row of bunks. The quarters are a jumble of fresh linen, rubber boots, heavy weather gear, magazines, books and other personal effects just before sailing time but everything is stowed away in its proper place within hours after the boat leaves port.

Directly below is the intricate maze of machinery that propels the Rover —her eight-cylinder, 525-h.p. Diesel engine and row upon row of valves, wheels and knobs that operate the all-important brine tanks.

Galley and Mess Hall

The most popular spot on the vessel, of course, is the combination galley and mess hall, directly behind the crew's quarters. This is the domain of T. A. Barcot, a veteran seagoing cook but one of the Rover's newest hands. He has been aboard only a trip or two.

Barcot operates over bachelor-type cooking facilities at one end of the hall, turning out the finest meals the Rover has had since she was launched.

"Fellows, they're not hard to please," he said. "They like stews, soup, steaks, hamburgers. Most anything. You know what they like, too? That Italian dish, pasta e fazul."

Once a week, usually on Saturday, Barcot fires up the barbecue on deck if the weather is nice and the crew sits down to an ocean picnic.

"Steaks, chops—fine eating barbecued," Nick said. Then he added thoughtfully, "Sometimes we have a fish barbecue—tuna." *

Fish on TV

Even fish are no longer immune to television, for commercial fishermen are experimenting with undersea television and movies. Underwater TV enables them to make continuous observations of conditions on the sea bottom and to see their fishing gear at work. Thus, a commentator wise-cracks, "Quick, mother, my patent gear. I want to sew up a new show called What's on My Line?"

Underwater "Eye"

A new underwater scanning device utilizing sound waves ended a two-year search for a sunken oil tanker bearing an estimated million-dollar cargo of high octane gasoline and kerosene.

The tanker, the 4,350-ton S. S. Transpet, which sank in a storm in the Gulf of St. Lawrence in 1951, had defied the efforts of salvage operators who had used all available means including conventional depth-sounding equipment.

The sonar unit which made the discovery possible is known as the sea scanar, developed by the Minneapolis-Honeywell Regulator Company's Marine Division. Previouslv its chief commercial application has been in locating schools of fish, including whales.

The sonar unit, a new type echo-sounding device which scans under water much like a sweeping searchlight, detected the sunken tanker after a 43-hour search covering 450 miles. Most of the search took place in dense fog and snowstorms.

The sunken vessel, which flew the Panamanian flag, was resting in some 120 feet of water and is believed to have most of its cargo intact. Salvage operations were scheduled for about our time for going to press.

Marine Radio Equipment

To its line of marine depth recorders and automatic pilots, Bendix has added a complete line of radio equipment.

Pacific Division of Bendix Aviation Corporation, North Hollywood, California, has purchased the radio products heretofore manufactured by Fisher Research Laboratories, Palo Alto, California. The line includes the famous "Skipper" series of radiotelephones, "Radio Pilot," Direction Finders, marine receivers and a complete line of transmitters from 30 to 200 watts in power.

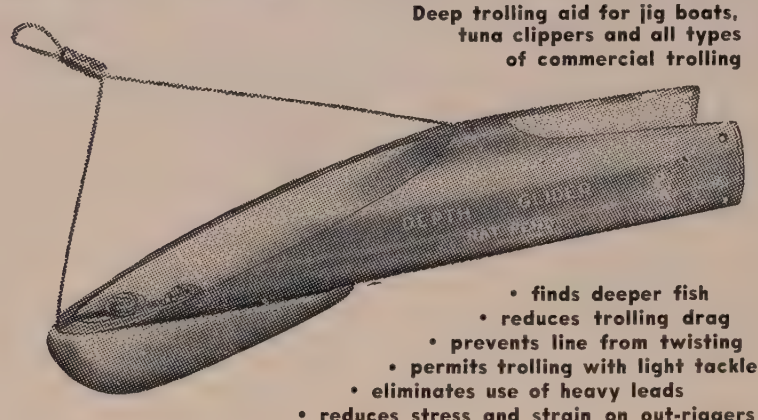
Bendix will manufacture and sell these well known products under its own name and at the same time the Company will utilize its extensive research and engineering facilities to develop new products for the future.

Acquisition of the Fisher marine radio equipment makes Bendix one of the largest concerns in the marine electronic field.

New

DEPTH GLIDER

Deep trolling aid for jig boats, tuna clippers and all types of commercial trolling



- **finds deeper fish**
- **reduces trolling drag**
- **prevents line from twisting**
- **permits trolling with light tackle**
- **eliminates use of heavy leads**
- **reduces stress and strain on out-riggers**

Depth Glider takes advantage of force of water flowing through it to hold it down where leads rise. Ideal for all types of jigs, lures, and bait . . . Made from finest materials: tenite, 280-pound stainless steel 7-strand wire, stainless steel adjusting machine screws.

Stocked by all leading jobbers and tackle dealers. Or write to . . .

DEPTH GLIDER

1346 South Broadway, Santa Ana, California

Telephone Kimberly 2-3429

"ASK THE FISHERMEN WHO ARE USING IT!"

Purse Seining

(Continued from page 13)

centrate the fish with chum. If this was successful, her speed was reduced so that a set could be made by the *John R. Manning*. (According to Hawaiian fishermen the local skipjack will disperse despite the throwing of chum unless a speed of approximately 2 knots is maintained.) When the captain of the *Momi* considered that the school was concentrated and holding, he signalled the *John R. Manning* to set. The set was started at the earliest moment the vessel could maneuver into a proper downwind position from the *Momi*. During the course of the set the *Momi* cruised in a circle inside the seine, chumming continuously. When the net was pursed, the *Momi* ceased chumming, gunned her engine, then cut it off and coasted over the cork line. The rest of the operation constituted a normal purse. Eleven schools of skipjack were located during the fishing. One of these was abandoned because of rough seas, 3 did not respond to the chum, and 7 were set on.

Bait losses were high, chiefly because time could not be spared to rest the bait after capture. The chumming rate varied considerably because the chief aim was to investigate the general method, not to work out minimum chumming rates, and consequently no effort was made to economize on bait.

The catch for the successful sets, with the exception of the fourth and sixth, represents the entire school. On the fourth the *Momi* appeared to have held only part of the school. The school for the sixth set was completely chummed, but a large segment of the school disengaged and sounded before the net could be pursed. A number of controllable factors contributed to this: (1) there was too long a period between chumming the school and pursing the net; (2) too much tow line was let out, thus increasing the pursing time; (3) the wilder iao were used as chum instead of the nehu normally used. This latter species, in contrast to the iao, remains very close to the boat after being thrown in the water.

It appears that by skillful handling of both the chum boat and purse seiner entire schools of Hawaiian skipjack can be captured. With our present information it is not possible to state whether this type of fishing is economically feasible. In order for the operation to be profitable, the cost of producing fish in terms of capital outlay, personnel, and consumption of bait must be no higher than that experienced by the present commercial fleet. The POFI operation, being an experimental one, was expensive, but some economies appear to be possible. The most practical methods are listed below:

1. Design netting gear that can be used in rough seas in order to overcome the present restriction to the lees of the islands.

2. Design a small chum boat that can be carried and launched by the seiner when a school is sighted. Bait reserves could be carried on the seiner.

3. Economize on bait by:

a. Reducing chumming rate to a minimum

b. Reducing the chumming period by:

(1) determining how long before the net is pursed chumming can cease;

(2) reducing preset chumming to a minimum by skillful boat handling;

(3) using the smallest possible net and fast winches to reduce pursing time (this might also reduce the capital outlay).

4. Use boat time more efficiently by:

a. Having bait boat locate a second school while the net boat is completing a set.

b. Providing a supply of bait so that the equipment is not held up when catching bait.

Factors Affecting Success

Weather: As already intimated, conventional purse seining in the central Pacific is severely handicapped by prevailing high winds. This is indicated by the prevalence of Beaufort force 4 (11 to 16 knots) or higher winds in the various island areas. According to Bigelow and Edmondson, 5- to 8-foot seas are associated with force 4 winds, and 5-foot seas in our experience are near the maximum for effective use of conventional purse-seine gear.

Strong winds particularly handicap purse-seine operations in the Hawaiian Islands are as they are most prevalent during the period when tuna are most abundant (May to October). Off the Line and Phoenix Islands winds are less severe, but nevertheless preclude any systematic effort to operate a purse seine.

Because of the generally unfavorable sea and weather conditions of the central Pacific, purse seining must generally be carried on in the lees of the islands. With the exception of the Island of Hawaii, the lees are quite small, thus greatly limiting operations.

Clarity of the Water: Clarity of the water is a factor that affects the efficiency of many types of nets, e.g., gill nets. Generally, as the water becomes clearer the nets become less efficient. Increased clarity of the water might affect a purse seine by allowing the tuna to see it at a considerable distance, stimulating them to dive under the net.

Purse seines are constructed so that they belly somewhat when laid in the water. As soon as pursing is started this is accentuated so that very early in the set a shelf of webbing is formed under the vertical sections of the net. If the water were turbid so that a fish did not sight the net until it was within 10 feet of the web, a 10- or 15-foot shelf might stop it from sounding if it became panicky and dashed about at random after finding its downward path blocked. If it perceived the net at 100 feet, a shelf extending at least 100 feet into the center of the net would be needed to turn back the fish. Further, in very clear water a fish sounding and striking a shelf of netting might actually perceive the edge of the shelf and swim towards it.

There are few data available on the relative turbidity of the Central Pacific and West Coast of North America, but the water south of the Galapogos is about 3.3 times as turbid as water south of the Hawaiian Islands. Therefore, a fish could theoretically see a net 3⅓ times as far in Hawaiian waters.

On the other hand, tuna may not become alarmed and sound wildly on sighting a net. They may simply swim to it and follow it down to the lead line like sheep following a fence. In this event water clarity would have little effect on the efficiency of a purse seine because, unless the fish were motionless, the difference in time (during which pursing might be proceeding) between the perceiving of the net at 100 feet and at 30 feet would be inconsequential. *(Continued on page 23)*

(Continued from page 8)

man O'Hara of Minnesota. The O'Hara bill would ban the use in food of "new chemical additives which have not been adequately tested to establish their safety" for human consumption. The bill would provide additional authority to the Food & Drug Administration to set up "tolerances" of the amounts of the newer chemicals that would be permitted to be added to preserve food and provide full power to prohibit the use of others.

Under legislation which will be sought next year, the Food & Drug Administration would approve or disapprove applications of chemical manufacturers for a clean bill of health for substances they propose to sell to fish and other food processors for use as preservatives and other uses. Aim would be to have the chemical manufacturers negotiate with the government for approval of their chemicals--not the users of those chemicals, such as packers and processors.

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TRIP-LEASING.--By the time you read this, the Senate Interstate and Foreign Commerce Committee may have reported out HR 3203, the House-approved trip-leasing bill. But don't be surprised if it still hasn't. Unless fish interests, joining with farm organizations, can get other Committee members to force the bill out, Chairman Bricker will sit on the bill until Congress leaves town.

If Bricker is successful in bottling up HR 3203, the Interstate Commerce Commission is expected to impose fully ICC order MC-43 to end present freedom of trucks hauling fish and fresh farm products to move in any direction and haul at rates agreed upon between shipper and trucker.

Congressmen advocating HR 3203, designed to prohibit the ICC ban, have accused Bricker with trying to prevent the bill from going to the Senate floor for a vote. They believe once the Senate gets to vote on it, the bill will be approved almost as quickly as in the House.

Meanwhile, the ICC is making another effort to "water down" its regulation regarding prohibition of trip-leasing for less than 30 days. The changes expected will follow hearings in June before the Commission. This is seen here as another effort on the part of the commission to forestall passage of HR 3203 by showing ICC intentions aren't as bad as charges claim.

Fish and farm interests, however, are more than ever determined to rely on the legislation rather than on the "bounty" of the ICC.

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FISH STICKS.--Production of fish sticks this year now is being predicted conservatively at close to 50 million pounds. A Fish & Wildlife Service report indicates that the phenomenal growth of this new industry may continue unchecked for several years.

For example, during the first 3 months of this year, production totaled about 9 million pounds of fish sticks. During the same time last year, production was less than a half million pounds. Actually, the 9 million pounds produced during the first quarter of 1954 was considerably more than the 7-1/2 million pounds produced in the entire year of 1953.

If production of fish sticks this year follows the pattern of 1953,

production could go well over the 50 million-pound mark. Production in the second quarter of 1953 dropped to less than half of the first quarter. In the 3rd quarter, production began climbing rapidly, until the last three months when production was 10 times that of the first 3 month's total, or about 5 million pounds.

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CANADIAN TUNA?--Canada's decision to explore the high seas for fish indicates the future build-up of another tuna fleet north of the border. Historically Canada catches most of its fish in waters relatively close to its shores. It now shows signs of aiding the Canadian fishery to expand --get deep sea-going vessels to build up a fleet for tuna and other fish.

The Canadian government has approved the importation of not more than 15 U. S. vessels of more than 65 feet registered length. Only bona fide fishermen or fishing companies will be given permits to import the boats. While Canadian fishermen will have to pay full import duty on the vessels, the duty can be paid off over a period of two year's deep-sea fishing.

Canadian officials don't think their fishermen will have much trouble getting the boats. The government says: "Two international events have made it imperative that we begin to develop a deep sea fleet in the Pacific . . . Because of the decline in the American tuna fishery and the Alaskan salmon fishery there are a considerable number of good deep-sea vessels now available on the American side at greatly reduced prices. The British Columbia fishing industry feels that exploratory deep-sea fishing would be worth a trial with these boats at their present prices."

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GULF FLEET EXPANDS.--The Fish & Wildlife Service reports that in the first four months of this year additions to the fleet of fishing vessels on the Gulf Coast have more than doubled over the same months of the previous year. During the first four months, first papers were issued to 153 boats, mostly for shrimp, compared with 65 a year ago.

On the Pacific Coast, the Service reports, 37 fishing vessels were added to the fleet during the first four months, compared with 40 boats during the same time a year ago. Middle Atlantic and Alaskan fleets also showed a drop in number of new boats launched.

Total addition to the fishing fleet for all coasts was 272, compared with 187 a year ago.

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MACKEREL.--The pack of canned mackerel in 1953 amounted to the smallest in 22 years--largely because of failure of both Pacific and jack mackerel to appear in normal volume.

The Fish & Wildlife Service says that the pack of canned mackerel and jack mackerel last year totaled 596 thousand standard cases (45 pounds each), valued at more than $5 million to canners. This was a sharp 61 per cent decrease in quantity and 56 per cent cut in value compared with the year before. Last year was the first time the mackerel pack dropped below a million cases since 1946.

Biggest production on record was made in 1947 when 1.8 million cases were packed. Value of the largest pack was $15 million.

Purse Seining

(Continued from page 20)

Skipjack tuna are not inherently "afraid" of a boat or net, for schools of skipjack have been observed swimming close alongside our vessels. Whether this occurs in those rare instances when the course of the vessel and the course of the school coincide, or is the result of a definite attraction, has not been determined. Further, when skipjack are pursuing the live-bait chum, they were observed swimming or foraging within a foot or two of the net without showing alarm. They would even swim by the unclosed gap in the purse seine and within 15 feet of the boat with its throbbing machinery without showing alarm or attempting to escape.

These observations lead to the conclusion that tuna leave a purse seine not because of inherent fear of foreign bodies in the water, but rather because on encountering a wall of netting in their course they simply avoid the obstacle by diving under it. If this is true, perhaps purse-seine sets are not particularly successful unless some other factor prevents the fish from diving under the net.

Vertical Thermal Structure: It is entirely possible that the vertical temperature structure of the water can influence the success of a purse-seine set, for if the lead line extends into cold water, yellowfin tuna and skipjack might be deterred from sounding out of the net.

The experimental sets in the Central Pacific have shown rather conclusively that tuna, even when corralled by the net, readily and quickly sound out of it. This occurred even when tuna were seen in the net several minutes after pursing began. Observations on the purse seines used by POFI showed that the lead line reached a depth of approximately 200 feet. At this depth the water in the Central Pacific, including Hawaiian waters, is generally only 2° to 5° F. cooler than the surface water temperature of about 80° F.

It is difficult to imagine this temperature difference and the high absolute temperatures at the lead line acting to prevent fish from sounding out of the net. In contrast, bathythermograms from off Cape San Lucas, Las Tres Marias, and San Benedicto Island (West Coast purse-seine grounds) having surface temperatures from 74° to 87° F., show a 4° to 22° differential between the surface and 200 feet. In this area not only the difference between surface and lead line but the low temperature at 200 feet might frequently act as a deterrent to sounding out of the net.

Behavior of Tuna on the Surface: The rapid, erratic swimming of tuna schools in the Central Pacific, particularly of the Hawaiian skipjack, has already been noted. Since the same species tend to swim slowly and are readily caught off Central America, there must be some factor in the Central Pacific environment that accounts for their behavior.

It is possible that the behavior of tuna while feeding is in large part a function of the behavior of their forage. It has been observed on the west coast of Central America that forage fishes will frequently "ball up" into a compact mass when attacked by tuna. This tends to produce a relatively stationary school of fish, an easy prey for a purse seiner. This sort of behavior has never been observed in the Central Pacific to the knowledge of the writers. The local forage species when attacked flee rapidly as a school or scatter with the tunas in pursuit. Further evidence that forage-fish behavior controls tuna behavior on the feeding grounds is afforded by the behavior of the skipjack when the purse seiner-chum boat combination was used to capture them. By the simple expedient of introducing the docile nehu, a species not normally found where tuna are feeding, the behavior of the skipjack is markedly changed. The speed of the schools can be slowed to 2 knots and they can be led into a circle inside a purse seine, all in response to a different food supply.

Conclusions

Tuna purse seining shows little promise of success in Central Pacific waters. On our trials we found that:

1. The area and period of operations were greatly limited by prevailing wind and sea. Even in the lees of the island operations were hindered by the coral reefs and the few schools present.

2. The tuna schools swam wildly and rapidly, frequently outrunning the vessel, and of course making it extremely difficult to set on them.

3. Tuna surrounded in the conventional manner dove under the seine. These tuna may do this easier than off the American coast because the water is much clearer and also warm to a greater depth. Cold water which might be a barrier to sounding, occurs below the lead line of even an extra-deep seine in the Central Pacific.

4. Live-bait chum would hold a tuna school while it was being surrounded by the purse seine. Small, but apparently entire schools, were captured in this way. Commercial operation in this manner is questionable because there is no proof that this method — using an expensive purse seine—would catch more tuna than pole-and-line fishing with live bait.

Canned Fish Specialties

Data on the 1953 packs of a number of miscellaneous canned fish and shellfish items show that the value of the production of canned fish specialties (fish bait, fish chowder, deviled fish, and tuna and noodles) exceeded 3 million dollars. This represented 283 thousand standard cases (48 pounds each).

The pack of canned fish cakes amounted to 75 thousand standard cases (48 pounds each), valued at 888 thousand dollars.

Production of canned squid totaled 164 thousand standard cases, valued at 702 thousand dollars. A total of 73 thousand standard cases of oyster specialties, valued at over 1 million dollars were canned.

Northern Pacific Fisheries Commission

United States members of the Research and Biology Committee organized at the February, 1954, meeting of the North Pacific Fisheries Commission, and an advisor, were in Tokyo last month to participate in the first meeting of the Committee. U. S. representatives making the trip were Edward W. Allen, commissioner; Dr. L. A. Walford, and Dr. W. F. Thompson, biologist members; and Clinton Atkinson, advisor.

The purpose of the Tokyo meeting was to consider research activities already under way in the three countries signatory to the treaty—Japan, Canada, and the United States —to develop a program of research to be submitted to the next meeting of the Commission scheduled for next fall.

The GLOBE

An International News File Compiled from FOREIGN REPORTS

Australia.—The Australian government has announced in connection with its proposal to purchase canned salmon, that token import licenses and allocations will be granted for canned salmon from dollar area sources, says the Australian Embassy in Washington. United States firms interested in selling canned salmon should contact Australian importers or make connection through their Australian representatives. Importers able to qualify for import licenses will be permitted to purchase canned salmon from dollar sources.

Belgium.—Belgium imported 13,494 metric tons of canned fishery products during 1953, mainly from Portugal, Canada, Japan and the Netherlands, the American Embassy at Brussels reported. The only imports of fish from the United States consisted of 60 tons of cured fish. In 1952, the United States had supplied 1,086 metric tons of canned fishery products, 7 tons of fresh or frozen, 62 tons of cured, and 1 ton of shellfish.

British Columbia.—Several promising shrimp grounds were located off British Columbia in a shrimp prospecting program carried out by the Canadian Fisheries Department's Pacific Biological Station. One of these grounds, near Cape Lazo on the east coast of Vancouver Island, is being fished commercially at the present time.

Canada.—The Canadian Federal Government has exclusive jurisdiction over the Newfoundland fisheries commencing March 31, 1954, according to an agreement between representatives of both governments. But, since the fisheries have such paramount importance in Newfoundland, the Federal Government would always wish to consult the Provincial Government on important policy matters.

Ceylon.—Ceylon Fisheries Department is soon to launch a large-scale fish factory—backed by aid from Canada under the Colombo Plan. A "streamlined" factory is planned, on the lines of those in Canada, at an estimated cost of over $211,000. The factory will be built with Canadian materials planned on Canadian technical advice. Besides the canning of porpoise fish, the Ceylonese Fisheries Department will increase its output of shark-liver oil, and among its byproducts will be fish meal, fish fertilizer, liquid fish meal, dried fish, and skin products.

French Morocco.—Export statistics indicate that the French Morocco fish processing industry, packing sardines and tuna principally, enjoyed increasing foreign markets during 1953, according to a report from the American Consulate at Casablanca.

Exports of canned sardines totaled 42,527 metric tons. The three leading export destinations for canned sardines were France, 16,212 metric tons; Indochina, 6,004 tons; and the United States, 3,369 tons.

Canned tuna exports totaled 1,928 tons, of which France received the bulk. For the first time since 1951, the United States obtained canned tuna from French Morocco. The amount was 5.8 metric tons.

Great Britain.—Due to anticipated light demand for fish, 25% of the trawlers in the Distant Water Vessels Development Scheme will be laid up this summer as compared with 20% last year. Owners at Hull, Grimsby, and Fleetwood, came to the conclusion that sufficient fish will be landed to meet all requirements during the summer with a 25% lay-up, for during this period vessels normally undergo refit and overhaul anyway.

Iceland.—Icelandic fishermen, barred from landing catches at Britain's main east coast ports, have sent 6,000 metric tons of frozen cod fillets to Russia the past year . . . also about 3,200 tons to Czechoslovakia and 350 tons to Hungary. Iceland signed a two-year trade agreement with Russia last August after more than five years of no trade between the countries. Under it Iceland will sell Russia nearly half her annual herring production and a third of the frozen fish production.

Iceland.—Total Icelandic landings by species in 1953 amounted to 361,328 metric tons, an increase of 7% as compared to the 336,760 tons landed in 1952. The increase was due to the larger herring catches—more than double the 1952 landings, according to a U. S. Legation dispatch from Reykjavik. The cod catch in 1953 was down 3%. Cod comprised 58% of the 1953 catch, followed by herring (19%), ocean perch 10%), and coalfish or pollock (6%).

India.—The Deputy Food Minister of India announced recently that the procurement of equipment and technicians worth $2,014,699 had been authorized under a Technical Cooperation Aid Scheme (TCA) for the expansion and modernization of sea fisheries. Orders have been placed for 144 marine Diesel engines, 11 insulated road vans, 3 bull trawlers, 7 reef gill-net boats, 5 wooden fishing vessels for shrimp trawling, 2 motor craft, 8 ice and cold-storage plants, 2 marine Diesel electric generating sets, fishing hooks, nylon twine, etc.

Netherlands.—The Netherlands Central Institute for Industrial Development in its annual report for 1953 indicates that at present it is investigating a new process for the preparation of fish meal for human consumption. Should technical difficulties be solved, this project offers many possibilities because there is still a world shortage of protein.

New Zealand.—A canned fish import licensing program for 1954, providing up to $560,000 for the purchase of canned fish, was recently announced in

New Zealand, according to reports from the American Embassy at Wellington. This indicated an opportunity for sales of canned salmon from the United States if the product was competitive with the Canadian product. Exporters interested in selling in this market were advised to submit firm name, price quotas, and quantities available to the Embassy for referral of offers to purchasing agency.

Japan.—Preliminary estimates place Japan's whale oil output during the 1953-54 Antarctic season at a postwar high of 41,400 short tons, 3,900 tons more than in the previous season. Of this output, 20,500 tons will go to Germany and 6,160 tons to the United Kingdom.

Norway.—The important Lofoten cod fisheries in North Norway have again turned out to be a failure with record low landings to date, reports the Norwegian Information Service. The total catch is likely to be less than the 1953 all-time low of 51,000 metric tons, and may not reach much more than 45,000 tons, according to experienced fishermen. For many years, the Lofoten fisheries averaged 70,000 to 80,000 tons a season. With the last two seasons a failure, an appropriation of Kr. 3 million (US$420,000) to provide work for some 3,000 destitute Lofoten fishermen was voted by the Norwegian Parliament early in April.

Norway.—A 12,000-ton capacity cold storage and freezing plant in Bontelabo, Bergen, was recently dedicated. Largest in Northern Europe, the Kr. 27.7 million (US$3.9 million) plant has a 6-story two-level building, with 225,000 square feet of floor space. In normal operation, the staff will comprise about 250 warehousemen and engineers; more during the winter herring fisheries.

Season's First Albacore at S.D. Cannery

First albacore brought to San Diego Harbor this season was unloaded the last week in June at the High Seas tuna cannery by Oscar and Arthur Vienola, Puget Sound skippers of the trawlers Anna Marie and Bell J. Their total catch was 664 pounds.

Hundreds of small boats from as far north as Alaska are around San Diego to seek premium species of tuna off the Baja California and Southern California coasts. Canneries are offering $400 a ton.

Fish Research Bill Signed

President Eisenhower signed last month the bill doubling the money available for federal research on problems of the American fishing industry.

Ike signed the measure in a brief ceremony attended by senators and representatives of both parties from the states most interested in commercial fishing.

The bill makes available about three million dollars in added funds for the Fish and Wildlife Service by transferring some of the revenue now paid to the Agriculture Department from duties on imported products.

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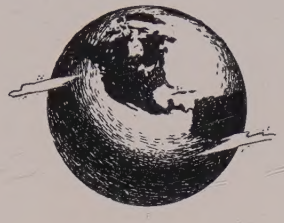

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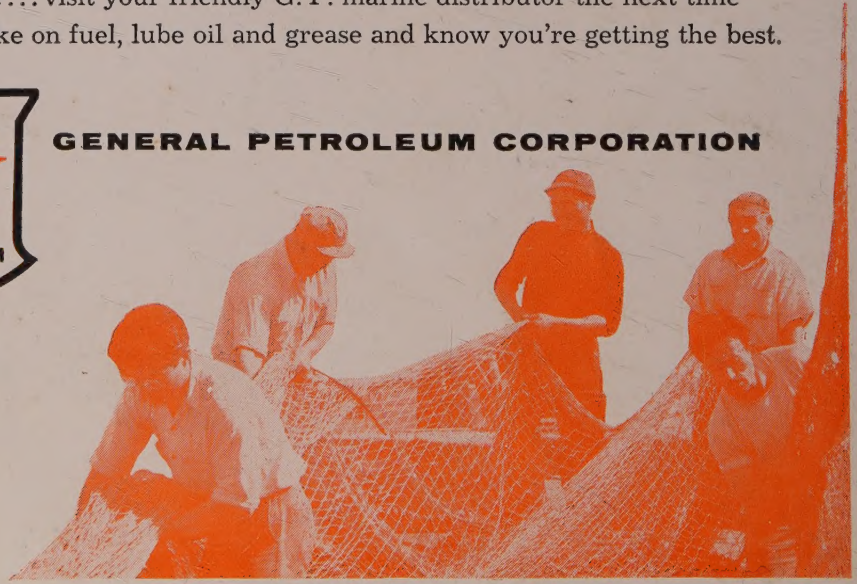

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